

Configuration of Cisco Router 1941 & Switch 2960

Reset Cisco Router 1941 to factory default.

1. Connect PC and Router via console with Putty or Hyper Terminal application running.
2. Restart Router and hit **ctrl + break** key continuously.
3. rommon1>confreg 0x2142 (press Enter)
4. rommon2>reset (press Enter)
5. When it resets, answer "no" to the question
6. Compiled Wed 22 Jul-15 23:22 by prod_rel_team_ (Press Enter)
7. Router>enable
8. Router#erase startup-config
9. Erasing the nvram filesystem will remove all configuration file! Continue? [confirm] y
10. Erase of nvram : complete
11. Initialized the geometry of nvram_ (Press Enter)
12. Router#conf t
13. Router(config)#config-reg 0x2102
14. Router(config)#end
15. Router#write erase

Reset Cisco Switch 2960 to factory default.

1. Connect PC and Router via console with Putty or Hyper Terminal application running.
2. Press and continue to hold the Mode Button at the Cisco switch
3. Restart by plug out and plug in the switch power cable.
4. Continue holding the mode button until we see the following command.
5. Switch: flash_init
6. Switch: del flash:config.text
7. Are you sure you want to delete “flash:config.text”(y/n)? y
8. Switch: del flash:vlan.dat
9. Are you sure you want to delete “flash:vlan.dat”(y/n)? y
10. Switch: boot
11. The switch will reboot

Basic Configuration For Cisco Router 1941

Assign console port password

```
Router(config)#line console 0  
Router(config-line)#password console123  
Router(config-line)#login  
Router(config-line)#exit  
Router(config)#exit  
Router#exit
```

Assign enable password

```
Router#conf t  
Router(config)#enable password enable123
```

Assign enable secret password (Optional)

```
Router(config)#service password-encryption  
Router(config)#enable secret secret123
```

Assign auxiliary port (Optional)

```
Router(config)#line aux 0  
Router(config-line)#password aux123  
Router(config-line)#login  
Router(config-line)#exit  
Router(config)#exit  
Router#exit
```

Assign telnet connection password

```
Router(config)#line vty 0 4  
Router(config-line)#password vty123  
Router(config-line)#login  
Router(config-line)#exit  
Router(config)#exit  
Router#exit
```

Note: All passwords can be the same except for the enable secret password

Create a banner

```
Router(config)#banner motd &
Enter TEXT message. End with the character '&'
*****
!!!AUTHORIZED ACCESS ONLY!!!
*****
&
Router(config)#+
```

Configure Interface to accept dhcp IP

```
Router#conf t
Router(config)#interface g0/0 (Connect to DSL router LAN port)
Router(config-if)#no shutdown
Router(config-if)#ip address dhcp (Because most DSL Router enable dhcp)
```

Note: We can set ip address on the interface g0/0 but in our case, we just get the ip from DSL modem router dhcp. Inside LAN we need to decide an IP address.

Enable default route direct to DSL router.

```
Router(config)#ip route 0.0.0.0 0.0.0.0 192.168.8.1 (DSL modem router IP address)
```

Create the sub-interfaces g0/1 for VLAN (Connect to Cisco Switch)

```
Router(config)#interface g0/1
Router(config-if)#no ip address
Router(config-if)#no shutdown
Router(config-subif)#ip nat inside
```

```
Router(config-if)#interface g0/1.1
Router(config-subif)#encapsulation dot1q 1
Router(config-subif)#ip address 192.168.1.1 255.255.255.0
Router(config-subif)#ip nat inside
```

```
Router(config)#interface g0/1.10
Router(config-subif)#encapsulation dot1q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#ip nat inside
```

```
Router(config)#interface g0/1.20
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#ip nat inside
```

(Optional, if sub-interface or vlan is not created) Configure the Interface g0/1 as default gateway

```
Router(config)#interface g0/1
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
```

Configure NAT (Network Address Translation)

```
Router(config)#interface g0/0
Router(config-if)#ip nat outside
Router(config-if)#exit
```

Configure PAT (Port Address Translation)

```
Router(config)#ip access-list standard 1
Router(config-std-nacl)#permit any
Router(config-std-nacl)#exit
Router(config)#ip nat inside source list 1 interface g0/0 overload
```

Configure router as dhcp server for VLAN 1,10 and 20

```
Router#conf t
Router(config)#ip dhcp pool VLAN1
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 8.8.8.8 (google public dns server)
Router(dhcp-config)#domain-name network4.com
```

```
Router(config)#ip dhcp pool VLAN10
Router(dhcp-config)#network 192.168.10.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#domain-name network4.com
```

```
Router(config)#ip dhcp pool VLAN20
Router(dhcp-config)#network 192.168.20.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#domain-name network4.com
```

Assign the Excluded DHCP IP

```
Router(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.30
Router(config)#ip dhcp excluded-address 192.168.10.1 192.168.10.30
Router(config)#ip dhcp excluded-address 192.168.20.1 192.168.20.30
```

Saving running configuration in cisco router

Router#copy run start

Checking & Testing	Command
Router#sh run	Router#ping 192.168.1.1
Router#sh int des	
Router#sh config	
Router#sh ?	

Note:

User EXEC mode	: Router>
Privileged mode	: Router#
Global configuration mode	: Router(config)#
Line configuration mode	: Router(config-line)#
Interface configuration mode	: Router(config-if)#

Cisco error opening tftp://255.255.255.255 at bootup

In order to stop the error warning,

Router(config)#no service config
Router(config)#no boot network

Configuration For Cisco Switch 2960

Assign console port password

```
Switch(config)#line console 0  
Switch(config-line)#password console123  
Switch(config-line)#login  
Switch(config-line)#exit  
Switch(config)#exit  
Switch#exit
```

Assign enable password

```
Switch(config)#enable password enable123
```

Assign enable secret password (Optional)

```
Switch(config)#service password-encryption  
Switch(config)#enable secret secret123
```

Assign telnet connection password

```
Switch(config)#line vty 0 4  
Switch(config-line)#password vty123  
Switch(config-line)#login  
Switch(config-line)#exit  
Switch(config)#exit  
Switch#exit
```

Note: All passwords can be the same except for the enable secret password

Create Vlan 10 and 20 (Vlan 1 is by default)

```
Switch(config)#vlan 1  
Switch(config-vlan)#name management  
Switch(config-vlan)#exit
```

```
Switch(config)#vlan 10  
Switch(config-vlan)#name staff  
Switch(config-vlan)#exit
```

```
Switch(config)#vlan 20  
Switch(config-vlan)#name student  
Switch(config-vlan)#exit
```

Checking

```
Switch#sh vlan
```

Configure static IP for Vlan 1, 10 and 20 (For telnet or remote access)

```
Switch(config)#interface vlan 1  
Switch(config-if)#ip address 192.168.1.20 255.255.255.0  
Switch(config-if)#no shutdown
```

```
Switch(config)#interface vlan 10  
Switch(config-if)#ip address 192.168.10.20 255.255.255.0  
Switch(config-if)#no shutdown
```

```
Switch(config)#interface vlan 20  
Switch(config-if)#ip address 192.168.20.20 255.255.255.0  
Switch(config-if)#no shutdown
```

For the switch to accept dhcp IP address

```
Switch(config)#interface vlan 1  
Switch(config-if)#ip address dhcp  
Switch(config-if)#no shutdown
```

Setting Default Gateway

```
Switch(config)#ip default-gateway 192.168.1.1 (Router 1941 g0/1 ip address)
```

Enable IP domain-lookup

```
Switch(config)#ip domain-lookup
```

Configure trunk vlan1-99 (Connection between the switch and router must be trunk)

```
Switch(config)#interface g0/1  
Switch(config-if)#switchport mode trunk  
Switch(config-if)# switchport trunk allowed vlan all
```

Single interface port Vlan assign

```
Switch(config)#interface fa0/1  
Switch(config-if)#switchport mode access  
Switch(config-if)#switchport access vlan 10  
  
Switch(config)#int erface fa0/2  
Switch(config-if)#switchport mode access  
Switch(config-if)#switchport access vlan 20
```

Range interface port Vlan assign (optional)

```
Switch(config)#int range fa0/1 – 5  
Switch(config-if-range)#switchport access vlan 10
```

Saving running configuration in cisco router

```
Switch#copy run start or wr mem
```